SOCIO-ECONOMIC STUDY OF THE PROPOSED SHELL OIL COMPANY PEARL MINE

INTERIM REPORT VOLUME 7

Social Services

Submitted To:

THE MONTANA DEPARTMENT
OF
STATE LANDS

November 21, 1977

This report is in the preliminary Review Draft stage. As such it represents neither the final judgement nor the official position of the Meadowlark Group or the State of Montana.

P.O.Box 1050
Helena, Montana 59601
406/442-9873

1110 South Third Avenue
Bozeman, Montana 59715
406/587-3560

TABLE OF CONTENTS: SOCIAL SERVICES

Law Enforcement

I. Law enforcement in perspective

Law enforcement traditionally is one of the most significant functions of local governments. This is reflected in the amounts of funds allocated to crime control in local budgets. According to citizens' perceptions of importance, law enforcement is often seen as the most critical service provided by local government. The combination of high visibility of the police and public apprehension over rising crime rates helps produce this selective emphasis on local law enforcement. This apprehension is heightened during a period of transition, such as occurs when rapid population influx brings traditional community values into conflict with a more rapid pace of life. Sudden growth also accentuates problems of cooperation and coordination between the parallel law enforcement agencies in the city and the county. For these reasons, the impact of coal development induced population growth in Sheridan and Sheridan County requires careful assessment.

The adequacy of existing law enforcement service is always a subjective determination and difficult to measure. Nevertheless, some evaluations are necessary if the impacts of increased population in turn are to be accurately assessed. Several measures can be applied which, taken together, produce a fairly exhaustive picture of the law enforcement structure and crime control network. These include: (1) the relationship of the law enforcement departments within the local government structure; (2) budget figures, including comparative statistics and trends; (3) manpower statistics; (4) crime statistics; (5) survey data on citizen demands and satisfaction. Information on these measures is compiled from several sources, including: Sheridan - Sheridan County Consolidated Law Enforcement Service study by the Governor's Planning Committee on Criminal Administration (1975), drafts of both the Sheridan city and county Community Development Plans (1977), the Sheridan County Needs Survey (1977),

city and county budget information, interviews with the heads of law enforcement services and Sheridan Press coverage.

II. Existing environment

Law enforcement structure

Law enforcement in Sheridan County is the general responsibility of the Sheriff's department. The City of Sheridan is the only one of four incorporated municipalities with its own police department. Thus, two law enforcement units share the primary responsibility for crime control: the Sheridan municipal police force services an approximate population of 14,000 in the urban core and the county Sheriff's department is spread over a suburban/small town/rural population of about 9,000 .

The city police department has a general patrol function, although not by geographical sector and patrol coverage is uneven especially during the night shift. The sheriff's department is unable to provide any regular patrol function and serves primarily in a reactive or responsive mode to reports and/or complaints. As of 1977, the Sheriff's department includes one resident deputy in the Dayton - Ranchester area through cooperative agreement with those two communities. While the sheriff's department consequently has the broader jurisdictional responsibility it is the police department which has the more intensive service load. The two units, while having duplicate functions, are nearly completely autonomous in structure with minimal coordination of effort, with the exception of radio communication.

The Sheriff's department operates within the traditional county commission form of government. This means that the responsibility for law enforcement is divided between the sheriff and the county commissioners who are independently accountable to the voters. The Sheriff is legally responsible for enforcing

the law but depends upon the county commission to approve budget requests. There is potential for conflict in this arrangement, especially under conditions of increasing pressure for more law enforcement. This circumstance of divided responsibility in the county also makes the possibility of formal functional cooperation with the city police department less probable.

The police department functions within the traditional mayor-council form of government. This means that, in comparison with the Sheriff's department, the lines of responsibility are somewhat clearer as the voters do not select the chief of police. Nonetheless, the chief still has two sets of constituencies to which to answer directly: the mayor and the council. Both of these entities share budgetary and appointment power over the police chief, while the mayor has supervisory authority. Although there is authority to create a public safety department, combining and integrating some functions of police and fire, this is not contemplated at the present time.

Manpower

The Sheriff's department employs seven personnel, including the Sheriff, producing a manpower/population ratio of 1:1300. In 1977 one addition was made, the Ranchester-Dayton resident deputy. The police department includes twenty-eight personnel, or a comparative manpower/population ratio of 1:700. Six officers were added in 1977, three in January and three in June. These ratios correspond to a Wyoming statewide average of 1:500 and are well below the national recommended standard of 1:500. This level of commitment is not uncharacteristic of smaller communities with limited resources which cannot capitalize on economics of scale.

Most of the problems associated with the smallness of these departments

have been adequately identified. Chief among them are the following: (1) inadequate patrol function; (2) inability to specialize by function within the departments; (3) informal supervision and task assignments; (4) lack of interaction and coordination between the parallel law enforcement units.

Most recently, the increase in peripheral duties has overburdened both departments. In the Sheriff's case it is the civil process load while the police department faces tasks such as escort for private business. According to the Governor's Planning Committee report, better utilization of manpower in the visible patrol function will be important.

Budgets

The relatively small size of the law enforcement units is reflected in the size of the budgetary allocations to the police department and sheriff's office. The police department budget for 1977 is $527,000, or about one-sixth of the Sheridan general fund budget. The sheriff's budget for 1977 is $129,000, or 4% of Sheridan County general fund appropriations. Thus, the per capita cost of police protection is $38.00 for Sheridan and $14.00 for Sheridan County. This compares with a 1970 figure of _____ for Sheridan and _____for Sheridan County. Thus, when inflation is taken into account, it appears that some effort has been made to upgrade law enforcement through a greater application of funds. The greatest response has been in the police department where the budget has increased 63% in two years.

As is the case with other service areas in Sheridan and Sheridan County, most funds are being put into operating expenses while questions of capital outlay are deferred until a clearer picture of needs for new facilities is developed. In the case of physical plant for law enforcement, the facilities already are inadequate in many respects and soon will be unsuitable. In both cases there

is insufficient space for personnel and functions and lack of appropriate access by the public. While the detention facilities are large enough, that of the police department is improperly located in the city hall structure.

Crime statistics

The demonstration of crime rates and crime trends through the use of statistics on reported offenses, arrests and court activity is notably suspect. This has been noted in the case of Sheridan County by the Governor's planning committee report. Nonetheless, these figures are the only attempt at systematic accounting of trends in criminal activity. Three sets of figures are contained in Appendix ____ which express an increase in crime activity since 1970. Except in the case of some very questionable statistics regarding larceny, the trends in crime increase are not dramatic. To the extent that crime is indeed on the rise, it is noteworthy that the trend precedes the expected population increment from Shell's Pearl mine.

As of November, 1977, the number of calls to the Sheridan police department was reported to be up 450 over the same time last year. (Press, Nov. 10) According to the police chief, the major increase in activity is in the categories of vandalism and traffic control. The Sheriff notes the greatest increases are in the areas of bad checks and assaults.

Table 1

Sheridan police department crime and arrest statistics

Part I crimes reported

	1972	1974	1975	1976
1. criminal homicide	0	1	2	2
2. forcible rape	1	1	6	1
3. robbery	2	3	5	3
4. assault	21	18	38	59
5. burglary	73	65	111	59
6. larceny	74	423	478	454
7. auto theft	22	20	38	28
Total	395	531	678	606
		arrests		
Part I	79	142	200	169
Part II	730	539	556	803

Table 2

Sheridan County Sheriff's
Department crime statistics

	1972	1973	1974	1975	1976
1. murder	0	0	1	2	1
2. manslaughter	0	0	0	0	1
3. assaults	16	28	25	23	29
4. robbery	0	0	1	0	1
5. burglary	33	19	39	42	55
6. larceny	68	65	75	40	63
7. auto theft	5	16	9	12	10

Table 3

Sheridan County District
Court Statistics

	1970	1973	1976	1977*
criminal	55	51	65	39
civil	450	530	408	387
probate	134	137	121	94

* Through October 31, 1977

Community needs assessment

The adequacy of law enforcement is ultimately a subjective determination on the part of local residents. People's perceptions of their own security might be unrelated to the commitment of resources to law enforcement. And the law enforcement function is capable of absorbing virtually all of the tax dollars local residents might wish to commit. It is simply important to note that professional standards and consumer standards can differ significantly, especially in the case of such an emotional service as crime control.

According to the Sheridan Needs Survey, concern over law enforcement is the number one issue throughout the county. Nearly 85% of those surveyed indicated an apprehension over the sufficiency of law enforcement service (see Appendix ___). The perceived importance of law enforcement is dramatized by the fact that 75% of the citizens surveyed indicated that they would be willing to expend more tax dollars on law enforcement in order to improve the service.

It is important to recognize that this citizen assessment of law enforcement is not necessarily a criticism of the current performance of either the police department or the sheriff's office. Rather, it is likely that it represents something of a self-fullfilling apprehension over the uncertain magnitude of coal development-related population growth. Nevertheless, it is important to document here that community residents already express considerable concern over the ability of existing units to meet current law enforcement needs, even before introducing the effects of the Shell Pearl venture.

III. Impacts on law enforcement

There is no reason to expect that the impacts on law enforcement will be other than in direct proportion to the anticipated population growth.

In other words, it is anticipated that the per capita crime rate will not increase substantially and, in turn, the per capita costs of law enforcement will remain roughly constant. If anything, the per capita costs can be expected to decline slightly within moderate population increases. Thus, with population increases of a few thousands, the ratio of operating costs to fixed costs is likely to increase producing some economics of scale. This will be true, however, only until the present capacity of the administrative and the detention facilities is reached at which point the population increases will necessitate capital outlays.

On the other hand, it is possible that the "crime wave" usually attributed to growth periods will become a self-fulfilling prophecy. To the extent that people want, and are willing to pay for, more police protection its proportion of the local budget will rise. Whether this will "reduce" crime or produce even higher arrest figures is anyone's guess.

IV. Mitigation strategies

There are two basic methods of attempting to alleviate pressures on law enforcement facilities. One is to cut costs through enhanced cooperation, elimination of duplication and improved planning resulting from either a total or partial consolidation of sheriff and police departments. Two is to reduce costs by contracting out to private business some of the less integral law enforcement functions such as parking, process serving or even some surveillance.

In Sheridan County these suggestions have been made in the past, most notably in the case of consolidation where the Governor's Planning Committee issued several suggestions for the selective merger of components, providing greater efficiency in areas such as records, communication and detention.

With the likelihood of increased population, the day will come soon for new law enforcement facilities. It seems quite logical to pursue the recommendations of the Governor's Planning Committee and plan for a joint facility in which some of the support components of the two departments are combined for greater efficiency and coordination, producing long term savings. It is also suggested that study be given to the question of creating a public safety department, combining selected aspects of police and fire protection. Also, the idea of using "civilians" for some of the peripheral functions of law enforcement should be explored. Finally, more direct avenues of cooperation with law enforcement agencies should be pursued.

Fire Protection

The fire protection system in the socio-economic impact area consists of the Sheridan minicipal fire department, the Sheridan County fire department and smaller units for Ranchester, Dayton and rural areas. This network constitutes comprehensive, if uneven, coverage of the service area. The units are territorially autonomous and while no formal consolidation of structure exists there are cooperative agreements covering marginal areas.

Sheridan Fire Department

Fire protection is the classic example of a proprietary service performed by incorporated municipality. This is because it is essentially a service to property and because its delivery is so directly linked to other elements of the municipal infrastructure such as water supply and the street system. Fire protection is a salient and symbolic service, one which citizens feel is very important to keep under close local control. More than two-thirds of Sheridan survey respondents indicated that they would be willing to pay more local taxes if the money were spent on fire protection.

The existing level of fire protection can be described in terms of budget outlay, facilities and equipment, manpower and specialization and direct and auxiliary capacity.

The 1977-78 fire department budget was set at more than $316,000, or slightly more than ten percent of the total general fund appropriation for Sheridan. Fire protection ranks only behind law enforcement and street and alley as a budget outlay. This is typical of a city of Sheridan's size.

Personnel

More than 80 per cent of the fire department budget goes to salaries and wages for the 22 man department, including the Chief. The size of the department allows for adequate shifting of men and needs of the department are not for more manpower per se. The real question involves the access of manpower and equipment to an ever larger service area. All city facilities are located at one central station which is expected to cover an area of _____ square miles. By professional standards and internal assessment the resources of the fire department are spread too thinly. Training facilities are inadequate to achieve the best professional standards as illustrated by the absence of any training grounds, including an oil pit and training tower.

Facilities and Equipment

In terms of facilities and equipment, the entire operation consists of three pumper trucks (one with 1,000 gallon capacity and two with 750 gallons) one pickup and one chief's vehicle. The trucks were purchased nine, 26 and 33 years ago. The 1977-78 budget calls for only token outlays for machinery and equipment, compared with an expenditure of $132,000 the previous year. The situation appears to be one of old, inadequate equipment getting slowly older. One acquisition is that of a

100 foot aerial ladder to assist in protecting the tall buildings making their first appearance in Sheridan.

The fire station itself has become increasingly inadequate to Sheridan's growing needs. In the first place it is too small to adequately house the necessary personnel and equipment. Necessary repairs have been put off pending decisions regarding the future of the facility. Access of vehicles in and (more importantly) out of the station house is limited by traffic patterns. Finally, the location is increasingly unsuitable. The fringe areas are becoming too far out for effective protection. Increasingly frequent delays at the Burlington Northern crossing have jeopardized effective fire department response to calls in the area. The haphazard pattern of development at the city boundary also has made it difficult to determine whose jurisdictional responsibility -- city or county -- is involved.

Calls, Response Time and Adequacy

In 1976, the Sheridan fire department responded to 168 calls, a rate of 14 per month. The 1977 rate is comparable with an average of 12-18 per month (Press, Nov. 10). While the incidence of responses has not increased dramatically, the response time is rising because of longer runs. This is an unavoidable consequence of an expanding service area. Other evidence, such as the amount of fire losses and insurance rates is so volatile as to be unreliable. The ultimate test is citizen satisfaction, and fire protection does not seem to be a primary concern of Sheridan residents. While about 57% expressed "increasing concern" over fire protection, this service ranked only 18 out of 33 among service concerns.

Current Cooperative Relationships

Any circumstance of rapid development at the city's fringe is likely to produce growing friction between departments having parallel functions in neighboring jurisdictions with unclear boundaries. To date this has not been the case in Sheridan - Sheridan County fire protection. A series of more or less informal cooperative working arrangements have allowed the various departments to meet the needs at the cracks where jurisdictions come together. The city and county are working together on the improvements at the county's airport facility. Under a new co-operative agreement the city will use its more specialized equipment to cover several major structures outside the city limits, such as the Junior College, the armory or the Wyoming Girl's School.

Fire Protection -Impacts

Fire protection, since it is primarily property oriented, is an example of a service whose growth is tied to the growth of new housing and settlements. The need for additional fire protection will depend upon the density of existing settlement. If the existing urban perimeter contains vacant space for development, the marginal needs for fire protection will be at least in proportion to the settlement growth. Also, to the extent that new settlement creates the requirement for new station facilities, the impact of population growth will be out of proportion to its numbers. There are compound effects of improved fire protection service as concerns with water supply and arterial access increase.

In the case of fire protection, projections for service expansion have been made. With only moderate growth at the fringe, the adequacy and location of the existing fire station will be doubtful. Plans call

for the eventual elimination of the station and replacement with two new stations, one at the north end and the other at the south end of the city. Depending upon rates of growth, from two to four additional fire stations are envisaged.

While these long term plans are being made, other short-term stop-gaps are already underway. Three new fire department trainees will, in February 1978, be stationed at the remodeled county fire department facility at the airport, thus giving quicker access to the south end of town and improving response rate. The fire chief also is contemplating the development of "satellite stations with mini-pumpers" (Press, Nov. 10, 1977) in order to cut response time.

During the next few years, even before the effect of the Pearl Mine will be felt, pressure on the existing fire protection system will place great strain. It appears that local officials will not make decisions affecting major change until two things are more certain: (1) the magnitude and location of population increase; (2) the availability of funding for improvements and additions. According to the Mayor of Sheridan, approval of the optional local sales tax is virtually a pre-requisite to the construction of a new fire facility. It would appear, therefore, that the impact of the Pearl Mine associated growth will come at a time of great demand on the existing fire protection service.

Mitigation Strategies

There are few short cuts to providing and maintaining adequate fire protection. As the service area expands, the need for additional facilities will accompany growth because time and distance are so crucial to service effectiveness. Citizens will continue to demand close proximity, guided by their insurance rates. Control measures are available but they impinge upon other decisions currently made by residents. Thus, high density zoning and stricter annexation requirements forcing the best utilization of existing contiguous space can help hold down fire protection costs but these may be considered radical measures in the community.

One important mechanism is increasing city-county cooperation whereby "no man's lands" at the edge of development are avoided.

Sewer and Water

Sewer and water are considered together because their characteristics as municipal services are quite similar. Each can be divided into component parts, including processing facilities, distribution lines (capital outlays) and operating costs. Each relies upon a mixed variety of funding sources including: hookup charges, user fees, plant investment fees, special taxing districts and intergovernmental payments. The impacts upon water and sewer facilities will be related more directly to new, especially urban fringe housing growth rather than population growth per se. Where only distribution or collection lines are involved, the impacts will be steady but not spectacular; where new treatment facilities are involved, the impacts will be acute and heavy.

Existing Environment

A. Water

The water system consists of three basic components: source of supply, purification or storage, and distribution system. The status of the system has been described recently in several reports. (Report on water and wastewater facilities for Sheridan, Wyoming, Black and Veatch consulting engineers, Denver, Colorado 1974; Water System Improvements, Sheridan, Wyoming, Water Distribution and Storage System, Howard Needles Tammen and Bergendoff, Casper, Wyoming, June 29, 1977). Based on these studies the City has developed a two-phase capital improvement program including: (1) those which are required to remedy existing system deficiencies, and (2) those which are required to serve a 35,000 design population.

The required improvements in the first phase of the program involve primarily storage capacity and distribution lines. Supply and processing are not addressed. Sheridan is fortunate to have a large available supply of water in reservoirs in the Big Horn mountains. The delivery capacity to the treatment facility is 13 million gallons per day (m.g.d.) This provides for some excess capacity since the treatment plant processes an average of 10 m.g.d. with emergency capacity of 15 m.g.d. Treated storage capacity is slightly more than 6 m.g. contained in 8 ground storage reservoirs and one standpipe. The phase one plan calls for the addition of one 4 m.g. storage tank.

The distribution network is characteristic of smaller cities in the respect that it is a combination of old and new pipes, high and low pressure areas and is generally adequate with a notable exception. The following table summarizes the improvements planned in phase I to expand the storage and distribution system in order to improve pressure and dependability.

TABLE W-1: SUMMARY OF WATER SYSTEM IMPROVEMENTS, PHASE I PROGRAM, WITH FUNDING SOURCES, SHERIDAN WYOMING

1. Central Cross Feeder Line 1/	1,260,300	Wyoming Farm Loan Board
2. Highland Avenue - Fifth Street To Eleventh Street	93,200	Economic Development Adm.
3. Four-Million Gallon Storage Tank 2/	605,000	Wyoming Farm Loan Board
4. Telemetering	161,000	EDA
5. Southern Cross Feeder Line	793,000	EDA
6. 16-inch Bypass of South Low Tank	8,000	EDA
7. Connection to Kiewitt Addition	7,400	EDA

Sources: Improvements and cost estimates from Howard Needles Report; funding sources from personal conversation with Cliff Sanders, City Engineer, Sheridan. Sanders stated that the total figure is low; the City is in the process of up-dating the total cost estimate.

1/ Bid let

2/ Bid letting scheduled for Spring of 1978

The foregoing improvements are expected to give the city an adequate water system capacity, capable of meeting peak day demands for perhaps 5 more years at current growth estimates. As settlement expands, however, the impact upon distribution lines will extend also to the treatment plant, the storage capacity and the raw water delivery system. The Howard Needles report recommends study during the two years in order to develop plans for meeting these expected needs. Of particular concern is the single pipeline which connects the four raw water transmission lines to the treatment plan which, if it were to break, under repair would mean a total cut-off of water supply. The Howard Needles estimate for construction of a new 7,400 ft. - 20 inch main is about $200,000.

The full set of Phase II improvements would provide a backbone system with the capability of serving a design population of 35,000 people. In addition to the storage capacity and processing system, Phase II improvements include the feeder mains required to serve this population. Such improvements would be made as areas of the city begin to develop. They cannot be designed or costed out at this time, as they are strictly dependent upon the spatial and temporal patterns of growth of the community.

The Sheridan County needs survey identified some concerns with water and water quality. Among Sheridan residents, more than 70 per cent of the sample expressed increasing concern over water quality (ranked 5 out of 33 concerns) and 60 per cent responded that they would be willing to spend more tax money to improve the water system (third only to law enforcement and fire protection). At least among certain segments of the population there's concern with the question of water quality in the present.

B. Sewer

The sewage disposal system consists of two components: collection system and treatment plant. Several recent studies provide a comprehensive description of current conditions and deficiencies (Sheridan Community Development Plan, SAPA, February 1977; E.P.A. 208 Wastewater Facility Planning, Johnson and Sheridan Counties Future Service Area Plan -- Sheridan, September 1, 1977, prepared for PRATO by VTN; Sheridan, Wyoming Wastewater Facility Plan - Step II, VTN Wyoming, Inc., Review draft, March 1976; Report on water and wastewater facilities for Sheridan, Wyoming, Black and Veatch Consulting Engineers, Denver, Colorado, 1974). In general, these studies show that the system has overall capacity for a moderate amount of growth but that several lines are in need of expansion and that, by existing E.P.A. standards, the sewer plant is inadequate.

The topography of Sheridan lends itself to the effective utilization of a gravity collection system. Most of Sheridan is serviced by two main trunk lines which drain the western, southern and eastern portion of the city and coverage at the processing plant at the city's north edge. This system is capable of handling current volume and could accommodate some increases. In those areas immediately adjacent to the treatment plant, lift pumping stations are required and little excess capacity exists. Growth in selected parts of the city will be limited by lack of adequate sewers. A number of specific current problems can be identified. For example:

> "The 8-inch lateral sewer on Delphi Avenue between LaClede and Burton Streets is reported to have overflowed onto the street on several occasions. Analysis indicated that this line and the 8-inch line of Fifth Street downstream of Delphi are presently overloaded by tributary flows, a fact which was confirmed when inspected by city forces. Both sewers are in need of immediate relief."

With growth to the north of the city and on Fifth Street there is a need for expanding the collection system. Black & Veatch identified an infiltration problem in the collection system which during wetter years results in increased infiltration of storm and ground water into the wastewater collection system. In addition to the laterals on Delphi and Fifth Street west of Goose Creek suffering from overloading, Black & Veatch also identified the 18-inch trunk sewer on Val Vista as flowing at or near capacity particularly during wet weather, requiring relief if the infiltration cannot be reduced.

Table S-1, taken directly from the Black & Veatch report, reflects their recommended wastewater improvements based on the 1974 study. These construction cost estimates did not have the benefit of detailed design based upon complete field surveys, but provide an indication of the costs. They are based on prices prevalent during late 1973 when the Engineering New Record Construction cost index stood at 1,940. Costs include manholes, special crossings and pavement removal and replacement but do not include easements or right-of-way. The updated estimated cost was based on the 1977 Engineering News Record Construction Cost index of $26,666.

TABLE S-1: SUMMARY OF WASTEWATER IMPROVEMENTS AND ESTIMATED COSTS, FIRST STAGE (1974-79), CITY OF SHERIDAN

DESCRIPTION	ESTIMATED COST 1/	ESTIMATED COST 2/
1. Relief Sewer (Lewis Street)	35,000	48,100
2. Infiltration/Inflow Analysis & Repairs	90,000	123,700
3. Sewer to Area East of I-90(Fifth St.)	155,000	213,100
4. Pump Station, Force Main and Sewer into area North of Treatment Plant (Keenan Avenue)	155,000	213,100
5. 8-inch Extension on Eleventh Street	27,000	37,100
6. 8-inch Extension Scott Addition	33,000	45,400
TOTAL	495,000	680,500

Source: Report on Water and Wastewater Facilities for Sheridan, Wyoming, Black & Veatch Consulting Engineers, Denver, 1974.

1/ 1973 prices, ENR Construction cost index = 1,940

2/ 1977 prices, ENR Construction cost index = 2666.6, updated by Meadowlark.

The treatment plant which was constructed in 1939 and remodeled in 1966 has a plant capacity to provide for an average flow of 2.1 m.g.d. and a peak flow of 5.2 m.g.d. with secondary treatment provided by trickling filters. The plant was designed to treat 37 hundred pounds per day of BOD and 32 hundred pounds of suspended solids. The Black & Veatch report that the plant generally removes an average of 91% of the raw suspended solids and 81% of the raw BOD. The plant effluent is released to Goose Creek.

The VTN study states "the Sheridan wastewater treatment plant is presently not meeting the wastewater discharge quality standards which are specified in the discharge permit." As with Black & Veatch, VTN identified a significantly infiltration/inflow problem in the Sheridan system. They predicted the cost of correcting 60% of the infiltration/inflow problem at $531,000. The infiltration problem is significant enough that the future design flow in 1995 without correcting the infiltration problem is estimated to be 4.1 m.g.d. Assuming rehabilitation of the collection system to reduce infilitration, the 1990 daily design flow is 2.875 m.g.d. VTN recommends correction of the infiltration/inflow problem in all cases, for each alternative they consider. They believe it to be both cost effective and environmentally sound. They also recommend composting of sewage sludge as the most economical and environmentally sound method of sewage sludge disposal.

In the more recent study provided to the city on September 9, 1977, VTN for the Powder River Areawide Planning Organization, a future service area plan for the city of Sheridan has been proposed. Its purpose is to establish basic trunk line water systems for the projected 5, 10 and 20 year future service areas of the city. It is the intention that this trunk line system, in conjunction with the wastewater facility plan, will provide a comprehensive 20 year wastewater facility plan. These reports are draft documents.

According to the Sheridan County Needs Survey, city residents are not quite as concerned about sewer as water facilities. About 68 per cent expressed increasing concern over waste treatment (ranking 8th out of 33 services) and 58 per cent would pay more local taxes for the purpose of improving the sanitary sewer system (5th out of 17 services). This is still a reflection of significant concern on the part of Sheridan residents and when considered in conjunction with water supply poses a major issue.

Impact

A. Water

It is important to note that there are existing inadequacies in the water supply systems, even prior to the population increment that could be expected from the Pearl and other mines. This is reflected in community resident concerns. It seems likely that the rate of growth expected will force modification of Sheridan's Phase I and II water plans. The water system will be inadequate again before five years is up and the need for the Phase II study is imminent. However, the City of Sheridan appears to have a handle on the problem and the capital improvement program, once underway, could be sustained to manage the impacts.

B. Sewer

As compared with the water system, the impact upon sewer facilities is likely to be more direct and immediate. There are definite limitations in the present collection system and in the capacity of the present treatment facility to assimilate growth. The question of sewage facilities will probably have a substantial effect upon the rate and direction of settlement growth. Limited availability could force population growth out of the immediate Sheridan area.

Mitigation Strategy

With proper planning and an appropriate combination of funding sources, the water and sewer system can be made to operate primarily as a "pay-as-you-go" system. Water supply and sewage disposal are services for which costs can be apportioned fairly equitably among those who benefit. This is because users can be metered and because there are few externalities associated with use. Theoretically, the growth impacts can be assimilated as they occur. It is only when new capital investment is required that special financial arrangements are necessitated. The city of Sheridan has been especially conscientious of late in addressing this problem and has developed a growth management strategy that promises to handle much of the impact.

Of the estimated $1 million in revenue from all sources for the water and sewer department, nearly 75% is generated from sales and taps and 20% from a new plant investment fee. This investment fee of $1450 per house and $800 per mobile home hookup is designed to apportion the costs of capital construction fairly. In the 1977-1978 budget, the water and sewer department requested more than $3.6 million for improvements in water processing and sewage treatment facilities, while only $140 thousand was approved. Apparently the decision was reached to defer decisions on these matters pending federal grant decisions and the accumulation of investment funds.

SHERIDAN COUNTY SCHOOL SYSTEM

Base Line Situation

Sheridan County contains three unified school districts. School District #1 encompasses the western end of Sheridan County and contains four school facilities. In 1976, a survey of these facilities indicated that two were in fair condition, one in poor condition and one in good condition.

School District #2 is the largest of the three school districts, encompassing the city of Sheridan and the surrounding area. Ten school facilities are located in this district. In 1976, six of the ten facilities were considered to be dilapidated and/or deteriorating.

School District #3 is the smallest of the three districts, containing only two school facilities and serving the eastern portion of the county. In 1976, the larger of the two school facilities was considered to be in poor condition.

In addition to the public school facilities enumerated above, one parochial school serves Sheridan County. This facility serves grades one through eight; a maximum enrollment of thirty pupils per grade establishes an upper limit on the number of students the facility will accept. In 1977, the total school enrollment reached 232, slightly below the maximum allowed. At the present time, there are no plans to construct additional classroom space.

School District #1 is presently experiencing the effects of coal development. The number of students in this district has increased from 600 in 1973-74 to 736 in 1977-78. The Ranchester school (which serves grades K through 6) is presently overcrowded and the Community Hall is leased for the third grade classroom (35 students, two teachers and one aide use the Community Hall). In addition, the Dayton Junior High and High School (serving grades 7 through 12) is overcrowded and some transfer of students to the old Ranchester grade school has been contemplated. However, this option is not favored because the old Ranchester grade school building is very old and presently does not meet existing fire standards. The school district is considering construction of two new grade schools (one in Ranchester and one in Big Horn). However, financial difficultues have deterred immediate action on this plan; according to local authorities, construction of these two new facilities has been delayed due to a lack of money.

Interviews with local officials in School District #2 indicated that most of the school buildings are quite old and a number of them do not meet existing fire codes. According to one informant, "If we don't add another kid we still have a basic problem." In fact, most of the current school facility planning in District #2 is to catch up with the existing situation rather than in anticipation of coal related population impacts. Local officials were concerned that the impact of Montana coal-related activities on District #2 would "wreck the school system." Local officials were concerned that development in Montana would result in new students in School District #2 but not in added property valuation to finance badly needed school facilities.

In 1976, a needs survey was conducted in Sheridan County and residents were asked to indicate what services and facilities the county needed to improve. Out of a list of thirty-three community concerns, the concern for school facilities ranked nineteenth, indicating that county residents were not as concerned about, or perhaps as aware of, the critical state of the existing school facilities. For rural residents, schools ranked tenth on this list of concerns. In School District #3 (Clearmont) schools were ranked twenty-ninth, while in School District #1 they were ranked seventh (Dayton) and nineteenth (Ranchester), and twelfth in Big Horn. In School District #2, concern for schools was ranked twenty-third in Story and nineteenth in the City of Sheridan. County-wide, the concern for schools was rated as follows: twenty-eight percent believed the school facilities were presently adequate, thrity-six percent said there was some need for improvement, and twenty-three percent reported that the school facilities were inadequate.

The apparent pressing need for new facility construction to catch up with existing enrollments presents a serious problem to all three school districts, but particularly School District #2, which is the largest of the three. None of the school districts currently have long-term capital improvement programs and thus facility constuction must be financed out of existing funds or through additional bond issues. The last Wyoming legislative session passed legislation to assist with such capital improvements. This legislation, known as the Osland Bill, is designed to assist local school districts with capital improvement programs. However, eventually such revenues are supposed to be reimbursed by the local school district.

As with all Wyoming school districts, financing relys primarily on local property taxes which are augmented by the state Foundation Equalization Program and special federal and state grants. The total property tax levies for the past four years (1974 through 1977) in each of the three districts are contained in Table 1. Local school districts are limited to twenty-eight mills for operations, three mills of which must have voter approval. A minimum of ten mills must be levied for a school district to qualify for state aid. In addition, counties must levy twelve mills which then are distributed to districts within the county on the basis of weighted classroom units.

Projected Impacts

The projected school age population for Sheridan County is shown in Table . Five alternative projections are shown; the baseline projection assumes no coal related population influx and is shown merely for illustrative purposes. The increment in school aged population which can be attributed to the Pearl Mine only is the difference between the baseline and the Pearl Mine population projection. This increment is quite small, totaling roughly 2000 by 1980, and growing to approximately 2,200 by the year 2000. As Table indicates, the pressure on existing school facilities that is likely to result from this modest level of growth would be quite small indeed. It would require an additional ten to eleven teachers and classrooms by 1980, if the average standard of 18.2 students per teacher were applied.

However, three important considerations must be noted. First, the existing school facilities are not considered to be adequate for the current school age population. Thus, Sheridan County is in the unenviable position of needing to invest considerable resources in their school system just to "catch up" with the current situation. Secondly, it is not possible to determine with any degree of accuracy just which of the three school districts will receive the bulk of the coal related population growth. School District #3 serves the eastern portion of the county and is located some distance from probable sites of coal related development and, thus, School Districts #1 and #2 are the most likely impact candidates. However, lack of knowledge concerning the likely settlement patterns of the immigrants makes it impossible to assign the population influx to one or the other school district. Thirdly, it is highly improbable that the Pearl Mine would be the <u>only</u> source of coal related population growth.

Projection of school age population under Scenario II (the most likely level of coal related growth) and assuming approval of the Pearl Mine results in an increase of roughly 200 school age children by 1980, requiring an additional eleven teachers and classrooms, as shown in Table . Under Scenario III, (high level of development), the school aged population is expected to increase by approximately 350 by 1980, which would require an additional 20 teachers and classrooms. These levels of growth could be handled (although with some difficulty) if the school system were not already suffering from the facility inadequacies described earlier. Given the existing situation, it is unlikely that the impacted school districts would be able to meet minimum levels of service adequacy in the early years of coal related growth.

SCHOOL AGE POPULATION [1]

	1975	1980	1990	2000
Baseline	5,192 (26%)	4,832 (24%)	4,560 (21%)	5,674 (25%)
Pearl	5,192	5,014	4,728	5,878
Pearl + I	5,192	5,302	5,171	6,373 (25%)
Pearl + I&II	5,192	5,341	5,861	7,072 (24%)
Pearl + I&II&III	5,192	5,492	7,115	8,309 (23%)
		TOTAL POPULATION		
Baseline	20,053	20,394	21,515	22,506
Pearl	20,053	21,143	22,348	23,400
Pearl + I	20,053	22,534	24,736	25,925
Pearl + I&II	20,053	22,691	27,822	29,333
Pearl + I&II&III	20,053	23,316	33,341	35,410

1 Persons aged 5 to 19.

PROJECTION OF NEEDS: TEACHERS AND CLASSROOMS [1]

	1975	1980	1990	2000
Baseline	282	265	250	312
Pearl	282	275	260	323
Pearl + I	282	291	284	350
Pearl + I&II	282	293	322	389
Pearl + I&II&III	282	302	391	457

1 Adequacy Standard: 1 teacher for 18.2 students.

SHERIDAN COMMUNITY COLLEGE

Base Line Situation

Sheridan Community College, located in the city of Sheridan, is a unit of the Wyoming Community College Association. Sheridan College is an accredited college offering preparation for upper division education as well as vocational-technical and career courses. In addition, the college offers a number of continuing education courses and assumes responsibility for sponsoring educational and cultural programs as a public service.

Enrollment figures at Sheridan College have been growing by a large percentage over the past few years. In the fall of 1973 for example, the total number of enrollees was 456. By fall of 1974, this figure had increased to 511, to 751 by 1975, to 738 by 1976, and reached an all time high of 971 by the fall of 1977. Due to this rapid growth, college dormitory facilities are presently filled to 123% of capacity. Local officials indicate that college students were turned away fall semester, 1977, because of the lack of available housing. Not only is the dormitory space filled to excess capacity, but students find difficulty locating affordable housing in the vicinity of the college.

A recently constructed vocational-technical center offers pouplar courses in welding and coal mining technology. Local informants indicated that interest in the welding classes is particularly high, citing the fact that 100 students were on the waiting list for enrollment in the welding courses. The new vocational-technical center (planned for completion in January, 1978) is geared to the mining industry needs. A local informant noted that a number of the area coal companies had contributed heavily to the vocational-technical center fund.

The Sheridan College Extension Program has grown in popularity as the population of the surrounding area has increased. Preliminary 1977 Fall extension enrollments show tremendous increases in all categories of courses. Coal mining technology courses particularly have been quite popular with the number of courses offered and the number of students enrolled increasing substantially. Local informants noted that population increases in the Gillette area, for example, have contributed to the increased enrollments in extension courses in that part of the state.

Approximately 60% of the Sheridan College budget is provided by the State of Wyoming. The remaining 40% is derived from local financing (a four mill county levy), tuition and fees, motor vehicle taxes, federal grants, investments and private sector donations. As of 1977, the Sheridan College budget totaled $1.4 million.

SOCIAL SERVICES - SHERIDAN COUNTY

Base Line Situation

The Social Services Department of Sheridan County is staffed by ten persons (including clerical help). The Director of the Sheridan County Social Services Department also serves as director of the Johnson County Social Services Department. Due to a very high case load and a shortage of staff, the Sheridan County Social Services Department is unable to provide an outreach worker to the outlying towns.

The Social Services case load appears to be growing quite rapidly. For example, the total number of social services cases in January, 1975 was 184. By September of 1977, this figure had increased to 231. The AFDC (Aid to Families with Dependent Children) case load also has been increasing over the years. In fiscal year 1970, the average monthly case load was 77. By fiscal year 1976, the average monthly case load had increased to 132. Likewise, the number of juvenile court summaries and number of cases where supervision of juveniles on probation was required had increased to 24 by 1977 from a figure of 5 in 1976 and zero in 1975.

At the present time, the state of Wyoming does not offer a public assistance program for unemployed fathers. As a result, most of the families receiving AFDC are female headed households and only a small proportion have a male head of household. In such cases, the father is usually disabled and unable to work.

Interviews with the local social service providers indicated concern on their part over the growth in the juvenile court cases. They expressed a desperate need for a juvenile shelter at the present time. Furthermore, the child protection case load is reportedly increasing monthly and the staff to service this increased load has not been increased since 1970. In addition, there have been recent increases in adult protection cases (alcoholics, transients, and older people thrown into crisis situations). It is worth nothing that older persons and disabled individuals on static or stable incomes are currently finding it increasingly difficult to make ends meet in Sheridan. This is particularly the case now that housing costs and other goods and services are increasing due to recent population growth in the area. Furthermore, Sheridan County does not have a landlord tenency law to protect the elderly and handicapped from inflationary rents due to population pressures.

With the increasing case loads, the three social services workers are now carrying an average case load of 90 cases each. In addition, the Social Services Supervisor carries a case load of thirty as well as servicing Jefferson County. Furthermore, the two public assistance workers carry a case load of approximately 157 cases. The total social services case load has increased from 276 in 1976 to 306 by June 1977.

The difficulty public assistance recipients and other individuals on fixed incomes have in Sheridan County was expressed by one local informant. This individual stated that welfare recipients are virtually getting pushed out of their houses due to their inability to pay inflationary rents. It is also worth noting that Wyoming public assistance payments are generally below federally established poverty guidelines. This seems to be a result of failure to keep up with inflationary costs of living over the past ten years. For example, it was noted that in 1976 the public assistance cash grant for a family of four was $248. By July 1976, this amount had only increased to $270. At the same time, however, the consumer price index had increased roughly 70% since 1967. Thus, population growth and inflationary increases in housing and other service costs pose a major problem for welfare recipients and others on fixed incomes. This is particularly a problem for the elderly in Sheridan County. It should be noted that the size of the elderly poor population in Sheridan County is roughly 6% of the total county population (638 in 1975). Thus, the Social Services Department

services a larger than normal elderly population as this has typically been a retirement community. The county does offer a Senior Citizens's Program to service this large population of elderly, and a Senior Citizen Coordinating Committee coordinates the local agencies which sponsor programs for the elderly, and generally acts as an information source and referral service to Senior Citizens. Among the services provided are mini bus service, daily calls to elderly women who request them, and a Meals-On-Wheels Program which is operated by volunteers. The YMCA also offers a variety of programs for both the elderly and the young.

HOSPITAL FACILITIES - SHERIDAN COUNTY

The Sheridan County Memorial Hospital is an eighty-nine bed facility which has a coronary care unit, surgical, obstetrical, pathological and radiological services. This hospital supplies specialized medical services and is considered a regional center for neighboring areas. Twenty percent of the hospital patients are drawn from neighboring Campbell County.

The existing hospital facility was completed in 1953. A small addition to the basement and first floor of this structure was constructed in 1971. The total floor space of the existing hospital is 68,000 square feet. The hospital site is approximately nineteen acres, and thus is capable of accomodating either a new hospital complex or expansion of the existing facility. Local informants indicated that existing local ambulance service is adequate to serve the expanding fringe area around the city of Sheridan.

Use of the Sheridan Hospital facility has changed considerably over the past five years. For example, in 1972 the total number of in-patient admissions was 3,750, and by 1976 this figure had grown to 4,995. However, the total number of out-patient visits had increased dramatically from 9,043 in 1972 to a 1976 figure of 16,479. At the same time, the average length of stay had declined from 5.5 days in 1972 to 4.4 days by 1976. Emergency care had also increased from a 1972 figure of 3,180 patients to 5,879 patients by 1977 and the number of surgical procedures had likewise increased from 1,392 in 1972 to 2,207 by 1977. Although the hospital facility is not overutilized at the present time, the occupancy rate has increased noticeably from 59.2% in 1972 to 64.8% by 1976. It might be noted that many authorities believe that an occupancy rate of 80% is desirable. Thus, by this standard the Sheridan Hospital facility is currently underutilized.

The existing emergency department at the Sheridan Hospital is considered totally inadequate according to local informants. With the increase in the number of emergency cases handled by this department, a recent inventory and assessment indicated that the emergency room of the hospital has top priority in any future expansion/improvement program. In addition, the surgical suite, consisting of two operating rooms, was also considered inadequate to handle the increased number of surgical procedures the hospital staff is called upon to perform. The recovery room also was considered too small and inadequate in its support facilities.

Sheridan County has three private ambulance services, one public ambulance service (Story) and one air ambulance service. These facilities and services are thought to be adequate for the present need, as well as anticipated needs in the near future.

MENTAL HEALTH SERVICES

Base Line Situation

The Northern Wyoming Mental Health Center serves Sheridan County and the surrounding four counties of Johnson, Campbell, Weston, and Crook. The Mental Health Center was created in 1966 by action of the Boards of County Commissioners of the five counties involved. By 1967 the organization employed six persons on its professional staff and the size of the professional staff increased to twenty-two in 1977. This represents a staff of seven in Campbell County, two in Crook County, three each in Johnson and Weston Counties, and seven in Sheridan County.

The Mental Health Center is required by law to provide the following five basic services: (1) out-patient counseling; (2) in-patient care; (3) 24-hour emergency services; (4) a partial care program; (5) consulting and educational programs. In 1972, a children's services program was created for the prupose of working more closely with parents of children having mental health problems and with the school system. In 1973, an alcohol counseling program was initiated and at the same time, funds were received to add a geriatric specialist.

For fiscal year 1976, 1,962 new patients were served, representing an increase of 377 from the preceeding year (1,585 in 1975). In the five counties, in fiscal year 1976 the total number of persons served was 8,190 of which 3,332 came from Sheridan County. This increased demand for the services of the Mental Health Center is, according to local authorities, in a large part a result of increased population size due to coal development in the Campbell County area. With additional population influx anticipated as a result of Montana coal related developments, the Mental Health Center anticipates increasing demands for their services.

When the Mental Health Center was established in 1966, the majority of the funding came from the federal government, supplemented by one quarter support from the state of Wyoming and an additional one quarter support from the five counties. By 1976, the proportion of funds coming from these sources had changed dramatically as had the total annual budget. The 1976 annual budget totaled approximately $662,000, representing a dramatic increase from the $86,000 budget of 1967. In fiscal year 1976, 26% of the funds for the Center came from the state of Wyoming, followed by 29% from federal grants, 16% for contracted services, 13% each from the counties and cities served, 8% from patient fees and an additional 4% from special-purpose program funds. Throughout the history of the Mental Health Center, the service load has expanded at a rate faster than the availability of funds. As a result, the major limiting factor in the availability of mental health services has historically been, and continues to be, financial. One local informant stated that in order for the Mental Health Center to continue providing the quality of services available in 1967, additional resources were badly needed.

Sheridan County Library Facilities

Base Line Situation

The Sheridan County Public Library is located in downtown Sheridan. The library facility was constructed in 1974 and contains approximately 13,300 square feet. The library serves the entire county and has two branches, one in Story and one in Clearmont. According to the standards established by the American Library Association, the existing library facility is adequate to serve the area and will continue to be adequate until or unless the county population exceeds 25,000 persons. At that point, additional library facilities will be needed. However, the land and facilities adjacent to the library belong to the county and thus could be used for library expansion when or if the need arises.

The County Need Survey conducted in 1976 indicated that 80% of the respondents believed that the present library facility was adequate. Seven per cent of the respondents indicated there was need for some additional library services, while two per cent said the library service in the county was inadequate.

The Sheridan County Library facility is supplemented by the libraries in the local school system, the library of Sheridan College, and the library in the town of Dayton.

Projected Impacts

Assuming no coal related population growth in Sheridan County, the existing library facility is expected to meet the needs of the projected County population of 22,506 by the year 2000. If the Pearl Mine is developed, but assuming no other additional coal related population growth, the Sheridan County population is projected to grow to 23,400 by the year 2000. The existing library facility is considered adequate for a population size of 25,000 and, thus, could easily handle the projected population growth attributed to the Pearl Mine. (assuming no additional coal related population influx)

If the Pearl Mine and the additional coal developments outlined in Scenario I (the lowest reasonable level of development anticipated) were to become operational, the population of Sheridan County is projected to reach 24,736 by 1990 and 25,925 by the year 2000. If, on the other hand, the most probable level of development were to occur and if the Pearl Mine were approved, the 1990 population level is projected to reach 27,822. Either of these alternatives would require expansion of the existing library facilities no later than 1985 in order to adequately serve the county population.